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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,610	12/17/2003	Takehisa Mori	018961-066	4081
21839	7590	04/03/2006	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			DEAK, LESLIE R	
			ART UNIT	PAPER NUMBER
			3761	

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/736,610

Applicant(s)

MORI ET AL.

Examiner

Leslie R. Deak

Art Unit

3761

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/2/04, 5/5/04
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. Specifically, applicant's recitations with regard to the operation of the magnets in particular directions is narrative and unclear. Examiner has interpreted the claims to the best of her ability for examination purposes.
3. Claim 10 recites the limitation "said corner" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,155,969 to Schima et al.

In the specification and figures, Schima discloses the apparatus as claimed by applicant. In particular, Schima discloses a centrifugal pump with housing 1 and inlet 11 and outlet 12. The pump includes impeller 3 with permanent magnets 33 and 34 (see FIG 1). The device has a torque generation section or drive 2 where drive magnets 7 generate movement of the impeller 3. The impeller may rotate without contacting the pump housing (see FIG 4), wherein the impeller runs on a layer of liquid flowing through the pump, corresponding to applicant's hydrodynamic pressure groove (see column 5, lines 15-20). The device further comprises an electromagnet 4 with coils 14, 15, 16. With regard to claim 2, the electromagnets interact with the permanent magnets 10 on motor rotor disks 5, 8, allowing the rotor disks to rotate about axis 9.

With regard to claims 5-9, Schima discloses that the electric circuit is controlled in a known way that includes position sensors (see column 4, line 65-67) and the ability to control the levitation of the impeller based on desired pressures, indicating that the pump has a controller that is capable of operating the pump as claimed.

With regard to claim 11, Schima discloses that the pump may comprise two sides with two impellers, each creating a hydrodynamic pressure groove (see FIG 6).

With regard to applicant's claim language drawn to the attraction behavior of the magnets, such statements, as best understood by the examiner, are held to be recitations of the intended use of the device. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. See MPEP § 2114. Furthermore, as best interpreted by the

examiner, the Schima device is capable of functioning as claimed by applicant, since Schima discloses that the magnets are arranged in such a way that attraction between the magnets rotates the impeller, providing a centrifugal pumping force.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over 6,155,969 to Schima et al.

In the specification and figures, Schima discloses the apparatus substantially as claimed by applicant with the exception of the radius of the hydrodynamic pressure groove. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the housing and the impeller disclosed by Schima to allow for a hydrodynamic pressure groove of the claimed dimensions, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges (such as "not less than 0.05mm") involves only routine skill in the art. See MPEP § 2144.05.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:


- a. US 5,965,089 Jarvik et al
 - i. Electromagnetic centrifugal blood pump
- b. US 6,074,180 Khanwilkar et al
 - ii. Magnetically suspended centrifugal blood pump
- c. US 6,503,450 Afzal et al
 - iii. Integrated electromagnetic centrifugal pump and oxygenator
- d. US 6,689,315 Linker et al
 - iv. Integrated blood handling system with centrifugal pump

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leslie R. Deak whose telephone number is 571-272-4943. The examiner can normally be reached on M-F 7:30-5:00, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tanya Zalukaeva can be reached on 571-272-1115. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3761

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Leslie R. Deak', with a large, stylized flourish extending from the end of the signature.

Leslie R. Deak
Patent Examiner
Art Unit 3761
31 March 2006